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IASSIST QUARTERLY

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Downloading for PC Users; Part I: The U.S. Government Experience

by Donald F. Harrison
W. Jon Heddesheimer
National Archives and Records Administration[1]

summary

What follows is the edited manuscript of a dialog presented at the Marina Del Rey meeting of the International Association for Social Science Information Service and Technology, on May 22, 1986. It focuses on the programs of four Federal agencies which download onto flexible diskettes information traditionally offered on tape. After describing various ways of writing data on diskettes, formatting considerations (DBMS or ASCII) are discussed. Past and future changes in the cost, speed and capacity of micros are stressed. Program details such as pricing and contractor versus in-house production of floppies are mentioned. The point is emphasized that Federal downloading is restricted almost entirely to small, simple files formatted in a DBMS because agencies do not consider the flexible diskette suitable for storing large amounts of data. Major statistical producers expect mass storage devices like the CD-ROM to become generally available to micro users. They further anticipate that soon the average PC user will be able to download and manipulate large ASCII files. The authors discuss various electronic data communication systems, such as the Navy's DIF and ISO 8211 as alternatives to media transfer. This leads finally to a discussion of digital communication methods such as BITNET, NETNORTH and EARN. The authors conclude with predictions of the effect on the future operations of data archives.

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Jon (Introduction): In this session we intend to describe the efforts of four Federal agencies to serve PC users by downloading onto flexible diskettes information traditionally offered and sold on tape. We will use a dialog format to encourage you to interject your own comments.

Don: There are many different ways to define the term downloading. My IBM PC Users Manual defines it in terms of simply "printing out" material in hardcopy. My PC TALK Users Guide defines it as receiving data from a remote terminal. For the purposes of this session, the "down" part of the word refers to moving data "down" from a mainframe (or mini) to a smaller computer (mini or micro, in this case to a micro), and the "load" part of the word will refer to the writing of that data on a 5 1/4" flexible diskette — commonly referred to as a "floppy" — so that the data can be manipulated on a microcomputer. In this session we will concentrate on downloading as a reference service to the user public.

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[1] The opinions expressed in this article are solely those of the authors and in no way reflect the official position of the U. S. National Archives and Records Administration.

Jon: The following four possibilities by which automated records can be downloaded from mainframe files onto floppy diskettes for users of microcomputers have been suggested in our research:

a. Downloading files in bulk. Using a package, the 'downloader' transfers an entire file in straight ASCII. This requires careful calculation to make certain the file does not overwhelm the PC's capacity. Also, because the data are relatively unformatted, the PC user will need to be well acquainted with the mainframe's procedures of access in order to retrieve and use the data.

b. Downloading files in a data base management system 8DBMS) format, such as LOTUS or dBase. These programs pre–format the information to allow the user to begin work at once. The vast majority of floppies offered by government agencies are in a DBMS format.

c. Selective data access. This allows the user to request selected portions of mainframe data either from a single file or across a range of files tied together in some fashion. This can be accomplished using generalized menus or customized packages, such as, in a corporation where the command "marketing department budget" might trigger the downloading of abstracted relevant information.

d. Cooperative processing. This method involves expensive custom packages which allow the user to establish an intelligent connection between mainframe and microcomputer applications.

Don: Agencies and institutions which make machine–readable data available to researchers find that there is a growing interest in storing and manipulating data by microcomputer. Some researchers are reluctant to use traditional computer service centers with mainframes and programmers. They would rather perform the research themselves in the privacy and convenience of the office or home. Moreover, today's microcomputers have the storage capacity and the sophistication of yesterday's mainframes.

Jon: Yes, Don. This is part of a general trend away from large mainframes and central processing facilities, accompanied by a great increase in the capacity of PC's. Offering data on floppies is one way for an archives to harness this trend and increase visibility and clientele.

Don: In preparing for this session, Jon and I located several very small Federal offices which download for their users on a "swap" basis: users send in formatted flexible diskettes which the agency writes on and returns to the researcher. The National Register of Historic Places, maintained on–line by the National Park Service, is one example of this practice.

Don: This presentation, however, will concentrate exclusively on the experiences with downloading of four Federal agencies. These agencies have had considerable experience distributing data on tape and, just in the past few years, have begun to write data onto diskettes. They are: the National Technical Information Service (NTIS), the Bureau of Economic Analysis (BEA), the Bureau of Labor Statistics (BLS), and the Bureau of the Census (Census).

Don: NTIS was created by an Act of Congress to make available, to the public, material created by a variety of Federal agencies because these agencies do not have revolving funds (such as the National Archives Trust Fund) with which they can sell copies of records to the public. Over the years, NTIS has become a broker for both textual and non–textual records.

NTIS's revolving fund allows it to set prices, receive monies, and publish catalogs. NTIS sells its technical information products and services under the provisions of Title 15 of the United States Code. In the early 1970's, it started to accept machine-readable data files (MRDF's) from Federal agencies and, since then, has been selling copies of tape files to the public. In the last year or so, NTIS began a program whereby any of its MRDF's could be ordered on flexible diskettes written in straight ASCII or in one of several commercial, packaged data base management systems. NTIS sees absolutely no problem with very large orders, and it is up to the customer to determine if her/his microcomputer can accept the file volume; one popular offering is written on 87 floppies. NTIS is the largest seller of downloaded data; it far exceeds all the others combined.

Jon: BLS was established in the early twentieth century and has been in the forefront of statistical analysis from the beginning. BLS, as well as the remaining two agencies to be discussed, believes in making its files available to the public directly from the analysts who created them. Consequently, BLS has for 15 years been publishing a catalog of data files available on tape. Two years ago it launched a program of making them available on flexible diskette as well. Each division within BLS does its own analysis, its own downloading, and sets its own prices.

Jon: BLS is uniquely qualified to download data due to the existence of a LABSTAT "umbrella" system. Created for in-house research, over 25,000 search data elements can be tapped across an enormous range of statistical data. Because this agency thus has the capacity to allow researchers to browse through the data (on-line) and pick and choose from all files, it has the capability to pioneer a similar downloading service to the public.

Jon: The BEA, like the BLS, believes that its analysts alone are capable of dealing intelligently with the user. Therefore, it makes data available to the public directly, not through any broker or archives. But its files are so voluminous and complicated that the downloading program encompasses only one data set, which was previously offered on microfiche. Therefore, this modest program is operated "in-house" by one person, merely as an extension of an existing service. The agency has no plans to expand the program.

Don: Census has been gathering statistical data since 1790, and began working with machine manipulated data with the 1890 decennial census. Not unexpectedly, Census has also been in the "downloading business" longer than any other Federal agency. The Data User Services Division, which has been making public use sample data files available on tape for many years, began in 1984 to make these same files available on floppies.

Jon: Yes, this program was the first. All agencies contemplating using downloading as a part of their reference service began by visiting Census. The agency spent a great deal of time and money creating custom packages which subdivide extensive databases into "PC-sized" chunks.

Jon: Thus we are discussing four programs, the oldest of which first offered downloaded files in March, 1984. This is a new service for the Federal government, which has thus far been slow to provide data on floppies. This is due partly to lack of resources for new services. But even more important, it is our contention that the low level of downloading activity is due to beliefs about the immediate future of the PC and the data medium it uses, which we will discuss in this dialog.

Don: One must calculate carefully before writing mainframe data onto floppies. In the first place, not all files can be downloaded to the PC because of manufacturers' limitations and specifications of the diskette. For example, one must consider the size of the file as it exists on the mainframe and the complexity of the language in which it is written. One flexible diskette, filled to capacity with a flat ASCII file, contains 362,496 bytes, (DOS 2.1 formatted, double sided, double density). This figure is insignificant when compared to a standard reel of magnetic tape (11" reel, wound with 1/2" tape, 2400' long, and filled to capacity with 9 track, 6250 bytes-per-inch). Such a tape could contain approximately 120 million bytes, or the equivalent of more than 150 floppies. Furthermore, when the data are formatted on the diskette to accommodate a microcomputer data base management system such as LOTUS or dBASE, the diskette will probably hold far less than 362,496 bytes. Of course, the obvious solution is to add more diskettes. NTIS offers one cartographic data file from the Central Intelligence Agency called "World Data Base II" written on move than 80 diskettes. In order to manipulate the entire file, one would have to load all 80 diskettes into the PC first. None of the other three agencies offers files of this magnitude on floppies, because they believe that users cannot or will not use them.

Jon: To illustrate Don's point, one can subdivide downloading programs into "active" and "passive." One agency makes everything available from its extensive holdings through a contractor and in most commercial DBMS formats. If the researcher is comfortable with 200 floppies, so be it. This is "passive" and a growing trend. Another agency tries to be somewhat active by limiting what it will offer to 2 diskettes per file, but does little beyond that. Two agencies offer their holdings only in LOTUS 1-2-3 format. One agency, by far the most "active", spends a great deal of time and effort subdividing complex files into compact units convenient to the PC user.

Jon: Outside the Federal experience, but certainly worth mentioning, is one data archives with limited resources which offers workshops on how to download and format data for use on a PC. This approach encourages users to master a FORTRAN program which enables them to download, and thus make greater use of the tapes held by this archives. They are saying, in effect, "We will give you the tools and turn you loose." Of course as a PC owner, you have to be very serious to use this as a research strategy.

Don: Software formatting is a second consideration. Many persons we interviewed agreed that all micro users are divided into two types: the mainframe expert "data junkie" who can work with unformatted "flat" data, and a newer, less energetic user on the scene. This second user prefers to insert a floppy, flip a switch, and let the machine do the rest. In many cases, this new user just purchased her/his PC last week and expects instant results. At least two of the four agencies we spoke with accommodate this latter type by formatting the data in a data base management system which allows the user to begin data manipulation· immediately. (LOTUS and dBase are two of the several DBMSs available). Formatting involves considerable reworking by the data producer. The payoff, however, is in attracting many more users, in fact an entirely new market of users, far different and more numerous than those who have traditionally ordered magnetic tape for use on a mainframe. We suggest that these clients are best served with data distributed according to the specifications of the individual order. This avoids consumer complaints and unpleasant scenes with commercial software manufacturers.

Don: Hardware formatting is another matter completely. There seems to be a universal preference (among data producers, data brokers and data users) for IBM-compatible diskettes. Most prefer DOS formatting over CP/M as well, though this doesn't seem to be an issue.

Jon: I agree that using hardware designed to be IBM-compatible is far more important than deciding on one software package. I would like to add that in the next few years, the ordinary user should be able to deal with software independent information and do easily what today only a "data junkie" can accomplish. First will come graphics packages, a process already underway. Next will come the tools for the inexperienced to handle large quantities of raw data. Along these lines, I expect the storage capacity of micros to increase two-fold in two years and ten-fold in five, with little increase in cost. Software designers expect this to happen and already are hard at work.

Don: The strategies of pricing suggest as many solutions as there are agencies. They depend on what the individual agency perceives its internal costs to be, whether or not it is dedicated to the concept of service to users and, in the case of agencies using a contractor, a markup from the contractor's costs. These strategies may be compared with the production of microfilm publications in traditional archives and libraries. Data producers (tape or floppy), like microfilm producers, may produce the product on demand, and charge the first customer the full amount required to recover costs; the second and third customers, in turn, pay only a marginal fee. A second solution is to spread the charge over several users. Yet another solution is to absorb the cost of preparation and simply charge a flat fee. In addition to production of microfiche publications, this range of solutions seems to occur with production of files written on either tape or diskette. In the case of diskettes, there is great diversity in charges: one agency charges $35 per diskette; another charges $75 for the first floppy, and $15 for each additional diskette in the same file; yet another agency now charges $60 for the first diskette and $12 for successive ones. Our fourth respondent, by producing only one file for the public and updating it each month, charges a flat $240 per annual subscription of 12 monthly installments; this amounts to $20 per diskette.

Jon: Circular A130, issued in 1986 by the Office of Management and Budget, instructs agencies to charge incremental costs incurred in serving researchers. Information is defined as a marketable resource, thus tacitly refuting the notion of public service. Pricing policies vary. For normal orders, the charges expressed are "so much per diskette," not "so much per file." In general, large user service organizations charge handsomely for special considerations, special formats, special tabulations, etc. One agency representative stated that "by-the-book" processing charges are so extreme that the final output (tape, floppies, hardcopy) costs about the same regardless of medium. This is partly due to the cost of getting the data ready for the user. Processing data so that the user can work with them frequently constitutes the major portion of the entire cost of a service order. And, of course, a part of this problem is also that to write data onto a floppy sometimes requires reworking and reformatting.

Don: Since floppies are fragile, hold a comparatively small amount of data and can be accidentally erased, each of the four agencies we spoke to have considered other media for use on the PC. Almost all our contacts discussed the use of the compact disk for digital data storage. Since the data are written with a laser, there can be no problem with accidental erasure or overwriting. It is a read-only mode. Unfortunately, it requires a separate and extremely expensive disk drive. All persons we spoke to predicted that compact disks will soon be both plentiful and economical. What makes the "compact disk-read only memory" (CD-ROM) so attractive is that it will store the equivalent of 1500 flexible diskettes — or the equivalent of 4 high density mainframe tapes.

Jon: Data professionals are also giving consideration to an interactive storage device with the characteristics of hard disks. This, if it becomes a reality, is further down the road than CD-ROM. (At present, "read only" is considered a virtue.) The Bernoulli Box, while too expensive for individual use is nonetheless indicative of what might become commonplace once PC's are better able to accommodate and manipulate large data bases. Thus one can confidently predict that a standardized, economical, mass storage replacement for floppies will soon be available. The average user will not rely exclusively on floppies and indeed, may not use them at all.

Jon: However, considerations might be reversed in the future when pondering whether or not to store data on the CD-ROM or the Bernoulli Box. There might be a case where too little data is requested, even for the economical use of a diskette. Such cases are tailor-made for the electronic bulletin board, which is designed to transfer small bits and pieces of data rather than huge data bases. One agency routinely gives small bits of data to users for the cost of a phone call instead of charging the price of a floppy. Electronic bulletin boards are becoming increasingly popular for the presentation of finding aids, lists and other advertisements.

Don: Electronic bulletin boards depend on electronic data transfer. Instead of writing the data onto a diskette and shipping the diskette to the researcher, it involves sending the data across a telephone or wireless circuit from the archives in which the data are stored directly to the researcher's microcomputer. It is a method that is gaining in popularity and could easily be the preferred data transfer method by the year 2000.

Don: However, electronic data transfer also introduces problems of interchange formats. These involve the use of data filtering devices which are important when machines of differing specifications from several manufacturers and using different software are communicating with each other on-line. In March, 1983 the U.S. Department of the Navy initiated a cooperative effort among government and leading office systems to define and test a Document Interchange Format (DIF) which vendors could support. Today DIF permits the interchange of textual data between word processors, providing about 95% of their document formatting needs. Twelve of the fourteen manufacturers who cooperated with the DIF test were Datapoint, Data General, DEC, Hewlett Packard, National Cash Register, Sperry, Motorola, AT&T, Four-Phase, Xerox, Wang and IBM. The DIF generally would filter textual data files between microcomputers. But what about statistical data files? And suppose one of the computers is a mainframe communicating with a microcomputer?

Don: At about the same time that the Navy developed its DIF, the International Organization for Standardization developed a set of standards which incorporates a mechanism allowing statistical as well as textual data structures to be easily moved from one computer system to another, independent of the manufacturers. The resulting system is called, "ISO 8211." It is much more flexible than the DIF and will accommodate magnetic tape, disk packs, flexible diskettes and data interchange over communication lines —in any combination, either as a source or a target. It will accommodate files with variable length records as well as those with fixed length records. User file structures such as sequential, hierarchical, relational or indexed, could be connected with the interchange structure. Therefore, it can be said that ISO 8211 is both content and media independent.

Jon: Once an operation involves more then a few files, or even perhaps from the very beginning, employing a good contractor is probably the best solution to the problems of disseminating downloaded data. The risks of floppies becoming obsolete, or of incorrectly anticipating researchers' needs are passed on to the contractor. Contractors with extensive experience are numerous, and will allow the researcher (for a price) to define his specifications. Contractors now offer agencies a flat price of under $25 per floppy, even if they have to copy and reformat the original tape, and for this price will keep a copy in a contractor maintained library. Thus it is now possible to make money on an initial order and still charge reasonable prices, a situation only true in the last few months. Before that, even the largest organizations found it necessary to sell several sets of a file before recovering their costs.

Don: An undeniable advantage of an in-house operation, especially in the early stages of building a floppy program, is that you can work with a researcher in developing files. You can also help her/him select a simple, established file to get the "feel" of things. Individual program managers still tend to offer this flexibility in decentralized agencies (in two of the four agencies we contacted). Also, an agency can send new files to sophisticated, established users for comment prior to public release. There will come a time, however, when economics coupled with instructions from the Office of Management and Budget, will make such operations impossible for all four agencies we contacted. The present reality is that these four agencies will probably have the choice of using a contractor or having no program at all.

Jon: The justification for modest or non-existent downloading programs in major statistical agencies is that floppies will soon cease to be the medium of choice for downloading to PC's.

Don: Also, given the consensus of opinion that micros will vastly increase in capacity and that the ordinary data user will be able to deal successfully with unformatted "flat" ASCII data, it pays to look down the road rather than be frozen in the present.

Jon: I recommend that you use electronic bulletin boards, first as a catalog to advertise holdings and later to hold simple updates and smaller data bases. Using an electronic bulletin board as a catalog and as a vehicle to answer routine researcher inquiries should greatly increase the visibilty of your collection while eliminating a great deal of your reference load. Ideally, reference personnel should deal only with special requests. To ask reference personnel to answer the same questions over and over is both expensive for administrators and demeaning to professionals. GTE SPRINT's "PC Pursuit" represents the wave of the future and is an example of how the general public can tap into electronic bulletin boards, or even on-line data bases. This relatively new service offers unlimited nighttime and weekend access to 14 cities from over 200 TELENET areas for $30 per month.

Jon: I would suggest also that you consider designing "umbrella" systems which tie your holdings together via common data elements, making the researcher her/his own boss regarding data access. I have already mentioned LABSTAT. Another example is to be found in the networks which have developed between IBM installations throughout the world. Started originally as independent data collections to service specific needs, they have gradually become integrated and can be accessed by the casual user via standard menus, (given, of course, the constraints of access levels.) Unlike LABSTAT, which was developed from the beginning to be somewhat like it is now, these systems were cobbled together artificially to fend off competition from other sources and to satisfy internal corporate requirements. They serve as an excellent example of how data archivists can develop menus to link together their own collections and eventually develop the means whereby researchers may consult numerous data archives utilizing standard search commands.

Don: This technique is already in use in libraries and manuscript collections in the United States. Consortia of library collections are accessible by computer networks in at least two very large systems: the Research Libraries Information Network (RLIN) and the On-Line Computer Library Center (OCLC). However, for the most part, what one reaches via these systems are descriptions of the collections, not the collections themselves. This is very different from our thesis. What we are advocating is that the data, as well as descriptions of the data, be made available to remote locations, in a library research area, for example, or in a researcher's work/terminal area, in short, anywhere a researcher has access to a microcomputer and a modem.

Don: Variations of this are at work in digital communications networks. Collaboration between academics at widely separated locations is becoming more and more common as technology allows them to exchange ideas and information more easily. At research locations throughout the United States, a network called BITNET is playing a major role in this information interchange. BITNET is a cooperative digital communications network connecting over 1,200 computers in universities and other educational and research institutions. By connecting to BITNET one can gain access to computers on the MAILNET, EARN (Europe) and NETNORTH (Canada) international networks. Using the facilities at any one of these four systems, data archivists could easily transmit part or all of their holdings to researchers located within the geographic confines of the others. A combination of the filtering systems laid between hardware of diverse manufacture together with the use of the new, world-wide, inter-computer communication networks will revolutionize the transfer of electronic data.

Jon: Data archivists, therefore must ponder the integration of their own holdings using umbrella systems, while learning to relate these to the contents of other repositories through digital communication networks. While accomplishing this may initially require additional resources, long run costs should decline or stabilize while user access increases.

Conclusions

As data archivists we must observe this research trend of exchanging mainframes for micros in order to perform statistical and other kinds of analysis on machine–readable records. A reference program offering data on floppies through a contractor is a good way to begin tapping this market which is already far larger than that for tape. Further advances in the capacity of micros coupled with new software, an inexpensive mass storage medium to replace floppies, and continually declining costs will allow individual PC users to function more and more like data centers. All this should only serve to increase the market for downloaded machine–readable data files.

Information transfer via floppy diskettes or other media is but one way to move data from mainframe to micro. An electronic bulletin board could be started by a catalog listing, and later enlarged using electronic data interchange over one of many communications networks such as BITNET.

Finally, archivists should plan to develop "umbrella" systems which will tie holdings together in a given repository and ultimately establish access to other collections.□

The POLL Database:

Roper Center's Online Source for Public Opinion Research

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the Roper Center and POLL

Established in 1946, the Roper Center contains the largest archives of public opinion research data in the world. This collection includes the basic data from over 10,000 public opinion surveys conducted since 1936, which have been gathered from over 40 major United States suppliers, and over 70 foreign countries. The Roper Center classifies approximately 65% of its materials as public affairs studies, 20% as market and consumer surveys, with the remaining studies focusing primarily on communications and mass media research. Not only an archival facility, the Roper Center provides its clients with services such as data analysis and interpretation, and searches of the archive. The thousands of scholars who have made use of the Center's data archives and services have tappped a rich source of machine-readable data, which is stored on magnetic tape.

In 1980, the Roper Center began planning a new service, an online retrieval system that would allow researchers, with the use of a computer and modem, to tap directly a database that would contain survey questions and responses. In 1983 this system, POLL, was constructed and is now available by subscription to researchers across the U.S. and internationally. The content of POLL differs from machine-readable data files in that the POLL database contains no raw data. Rather, POLL approximates a bibliographic database, with each record giving all the information necessary to form a complete citation. Searchers retrieve, upon entering a topic, three basic kinds of information: the texts of poll questions related to that topic, the responses to each question, and "study level" information: the dates the poll was conducted, by whom, the type of sample, and so on. The following is an example of a record, which illustrates the various fields of information available:

****

Question:

R12 The Reagan Administration has proposed giving $100 million in military, medical and economic aid to the rebels fighting the Sandinista government in Nicaragua. Do you favor or oppose this proposal?

Responses:

Favor 33%

Oppose 54%
Not sure 13%
Survey Organization: NBC/Wall Street Journal
Population: National adult
Population size: 1599
Interview method Telephone
Beginning date: APR 28, 1986 Ending date: APR 29, 1986
Source Document: NBC News/Wall Street Journal
Date of Source Document: MAY 12, 1986
Subject: LATIN
DIPLOMACY
PRESIDENCY

FULL QUESTION ID: USNBCWSJ.051286.R12

****

The need for an online system like POLL that would provide accurate and inexpensive data to their clientele was very apparent to the Roper staff who conducted manual searches of the archives for clients. Prior to the start of the online service, the staff created manual subject indexes of the reports, or used indexes that were sometimes supplied by the contributing survey organizations. To conduct a search for a client on a particular topic, in a specific time frame, was very labor intensive: many times this included having to sit down and read the entire report. Data were then compiled for patrons through a great deal of cutting, pasting, and photocopying. It was not uncommon for the Roper staff to have to pull the same study ten times within a year and document the same things ten times. Obviously, this degree of labor intensiveness made jobs very costly for the paying patron. For many people, including academics, with limited financial resources, the cost was out of reach. In the online system, the data are simply input once, in a standard format, and are readily available. Through POLL, Roper is meeting its goal to provide easy access to data which are timely and accurate, while holding down costs, both internally and to the clients it serves.

Scope of the POLL Database

Researchers using POLL should have a good understanding of the types of questions contained in the database. POLL incorporates all surveys with national samples that come into the archives, from most of the major polling organizations, such as Gallup, Roper, Yankelovich, Harris, and major media like ABC, CBS, NBC, Los Angeles Times, and many more. POLL includes only national surveys. Although the Roper Center does archive data files from international surveys, such as the U.S. International Agency Surveys, and state-level studies such as the Minnesota Poll, these are not added to POLL. Roper Center has, however, begun planning to create a separate database of state-level surveys, though initiation of this database is still several years down the road.

There are two types of study which are undertaken by the polling organizations and entered into POLL. Most organizations which store their survey results at the Roper Center conduct omnibus surveys—ongoing surveys which measure changes in attitudes over a period of time. In addition, omnibus surveys cover many different types of political data or policy issues in one study. The second type of study is the special, one-time study. Typically, these studies focus on a specific, major topic: "As a result of the weapons deal (with Iran and the Contras in Nicaragua) that is now coming to light, do you think the U.S. Congress should cut back on American military aid to Israel, or do you think Congress shouldn't do that?" A single search in POLL will find both types of study.

Who Uses POLL?

The main users of POLL are from academia, the media, business, and even polling organizations, who may use POLL to design a study, or to compare their results to those of other organizations. Academic institutions may also be members of ISLA (International Survey Library Organization), the cooperative, educational arm of the Roper Center. ISLA members enjoy reduced rates for many of the Roper Center's services, including the use of POLL. Annual subscription rates for POLL vary according to member/non-member status and whether the institution receives the reduced ISLA rate.

The Roper Center is trying to alert users, especially those in academia, of the value of making POLL available to students for classroom use, particularly in disciplines such as sociology, political science, journalism, and any of the increasing number of academic departments that utilize public opinion research as part of student coursework. The Center is encouraging institutions to take out a POLL account, and give students direct access to the database. At present, Roper Center is in the process of negotiating a subscription to one institution for the purpose of direct access for its students. To open such a subscription requires a great deal of planning on the part of both Roper and the institution, mainly because of the internal bookkeeping required by allowing general access.

The Plan for Building the POLL Database

The staff at the Roper Center have set entering the most current data as their highest priority, with omnibus surveys taking precedence over special, one–time studies. Typically, when an omnibus study comes in, unless it is extraordinarily large, it is entered into the database within two weeks, so that the information is very current. Special studies are entered as quickly as possible, though these surveys are more time–consuming to enter than the omnibus studies. At present, the entry of omnibus studies is almost complete for all studies conducted from 1974 to the present.

At the same time that current data are being loaded, Roper Center is retrospectively entering data from older surveys. Ultimately, the database will include information going back to 1937. An average of 500 questions a week are entered into the system: over 79,000 questions have been entered thus far. No specific target date for the completion of the retrospective entry project has been set. Predicting how long it will take to enter all national surveys is difficult, as the number of collections available in the earlier years decreases. Still, it will be several years before the retrospective entry of national poll data is completed.

How Can POLL Aid Research?

A researcher may need to use POLL only to satisfy a public opinion research question. For example, a researcher interested in the question of whether people think children should be taught sex education courses might find this kind of information through a POLL search:

Question:

Q14G Do you think that public elementary schools in this community should or should not teach sex education in grades 4 through 8? (If favor sex education in grade 4 through 8, ask:) Should this program include discussions about AIDS (Acquired Immune Deficiency Syndrome), or not?

Responses:

Favor sex education/Include discussions of AIDS 67%
Favor sex education/Don't include discussions of AIDS 4%
Oppose sex education 21%
No opinion 8%
Survey Organization: Gallup Organization
Population: National adult
Population Size: 503
Interview method: Telephone
Beginning date: FEB 9, 1987 Ending date: FEB 25, 1987
Source Document: Gallup Poll
Date of Source Document: MAR 22, 1987
Subject: SEX
EDUCATION
HEALTH
FULL QUESTION ID: USGALLUP.032287.R1

However, if a more detailed analysis than this is needed, e.g. a breakdown of responses by age, race, men vs. women, etc., the machine-readable data files must be tapped. The researcher, having isolated the correct studies through a POLL search, must contact the Roper Center to establish whether the Center has the corresponding data sets. These data sets contain the raw data of individual responses to survey questions, and are stored on magnetic tape. POLL, in this example, has served as a reference tool, leading the researcher to the data sets which are rich in information on the his topic.

Roper generally does have the data sets referred to in POLL, (though there are some exceptions, e.g. the Harris Poll, which is archived at the University of North Carolina.) The Center receives the data directly from the contributing survey organizations, though the lag time for receipt of the sets varies greatly from one organization to another. Some organizations send out six months worth of data sets at a time, while others send their data each time a study is conducted. In addition, academic researchers whose institutions are members of the ISLA, may find that their institution has purchased the tapes from Roper, and that they may access the files on their own campuses.

How is POLL Searched?

Anyone familiar with library card catalogs or printed periodical indexes understands that they may hunt for books or articles using set "fields" of information—author, title, or subject. Researchers who have made the transition from print catalogs and indexes to online searching—whether searching a library's online catalog or the databases of a commercial information vendor, such as Lockheed Information Systems' DIALOG, System Development Corporation's ORBIT, or the Bibliographic Retrieval Services (BRS)—find the possibilities for searching are greatly broadened through the use of the computer. The computer can enable them to seek out, for example, individual words imbedded in a title or abstract of a book or article, or to limit their findings to a specific year of publication. Perhaps most important, an online search allows the combination of two or more distinct concepts in a single search (e.g. learning disabilities and college students), thus retrieving very specific search results.

POLL is, of course, a unique database, and while the fields available for searching differ from the usual bibliographic format, the same search concepts and strategies still apply. Following the instructions in the User's Manual for POLL, which is distributed to subscribers, the researcher can execute a search with the knowledge of some basic commands. The following is a very brief explanation of the methodology used in searching POLL:

1. The basic command for searching the POLL database is the "FIND" command, which may be abbreviated as "FIN".

2. The searcher must indicate what kind of search is to be executed, by choosing from the fields, or "indices" available:
   SUBJECT: Topic(s) assigned to question
   WORD: Actual text of questions and responses
   ORGANIZATION: Organization conducting the study
   DATE: Beginning date of the study

   Examples of the general form that a search might take are: FINd NAME OF INDEX ENTRY IN INDEX

   ```
   FIN WORD REAGAN
   FIN SUBJECT ETHICS
   FIN ORGANIZATION GALLUP
   FIN DATE 12/18/85
   ```

   The User's Manual lists, in its appendices, all subject category codes and definitions, and organization codes. A cautionary note: subject categories are very broad, and searchers should not assume that their topic constitutes an official subject. For example, a search done on Reagan as "SUBJECT" will net zero hits, while the same search done in the "WORD" index will retrieve over 6,000 items.

3. Searchers may use the truncation symbol "#" to pick up all forms of a word. A search of the word "librar#" will find items containing the words "library," "libraries," or "librarian."

4. The searcher must wait for an arrow to appear on the screen before entering a search. The prompt, "->" means that the system is ready for searching.

   A simple search might look like this:

   ```
   ->> fin word librar#
   -RESULT: 93 items
   ```

The above example constitutes the simplest kind of search that might be done in POLL. The system also supports more sophisticated search strategies, utilizing standard Boolean protocols (using AND, NOT, and AND NOT) to combine two or more search terms into a single statement:

```
->>fin word reagan and subject diplomacy
-RESULT: 62 items
```

Or, items may be "nested" within parentheses to indicate the order in which terms are to be searched. Ordinarily, the system searches items in the order in which they were entered, from left to right, and from top to bottom. Nesting terms makes the system search the items within parentheses first, and then combine the result with items outside the parentheses. Here is an example of a fairly complicated nesting strategy:

```
->>fin word boycott# and ((south and
africa) or aparthied)
```

Searches may also be entered step-by-step. The same search might be done like this:

```
->>fin word south and africa
-RESULT: 17 items
->>or apartheid
-RESULT: 38 items
->>and boycott
-RESULT: 9 items
```

These examples just begin to touch on the possible search techniques that may be used to search POLL. POLL is designed to be flexible, and accurate search results may be obtained through many different avenues. This flexibility makes POLL a relatively easy database to access and search. With the aid of the User's Manual, and a little practice, researchers using POLL can achieve proficiency in a fairly short time.

Once a search is completed, the user may view the records on the screen by issuing a "TYPE" command. In order obtain hardcopy results of the search, the searcher may want to print the results directly, as the search results scroll by on the screen. In this case, it may be advisable to first "sort" the search results, eg. by date, by using POLL's "SEQUENCE" command, before entering "TYPE." Otherwise the records will be printed out in random order. Another possibility is to download the results directly to disk. These results can be edited later with any word-processing software that can handle a standard ASCII file. In the event that a search should result in an extremely large number of items, using these techniques may not be practical. The file can instead be printed at the Roper Center. The searcher issues the command "..POLLPRT", sending the search result directly to the Roper Center, where it is printed and then mailed to the searcher. Roper Center does charge for this service, and rates vary according to the size of the file.

Conclusion

Rutgers University, a participating ISLA institution, has been a subscriber to POLL since September of 1986. Rutgers handles its POLL activities through the Alexander Library, the graduate library for social sciences and humanities research. The librarians at Alexander treat POLL like any other database, doing searches on it at patron request, and charging a flat fee to cover some of the cost of connect time and telecommunication charges. Thus far, we have had two requests from graduate students in political science for POLL searches—one on South Africa and apartheid, and the other on the attitudes of gays on political elections. The reactions of these two students were favorable to POLL as a system, although the student researching the attitudes of gays found little relevant material in POLL.

As the coordinator of online reference services at Alexander Library, I do much of the database searching, and am the person most familiar with POLL. Overall, I find it extremely helpful in locating polling results—it is an easy-to-use resource, and it produces results far faster than paging manually through indexes. It is also a relatively inexpensive database, costing $15.00 per hour of connect time for ISLA members. (In comparison, we often search databases on the DIALOG system which cost upwards of $100.00 per hour of connect time, plus $1.00 or more for each citation—and there are many databases which cost much more than this.) One minor drawback of POLL, financially speaking, is that it must be accessed directly in Storrs, Connecticut, rather than through a telecommunications network like TYMNET or TELENET, so telephone charges can be rather high. Still, when one considers the alternative of manual searching, POLL more than pays for itself.

I would also like to add that one of the chief strengths of POLL is the support that Roper Center gives to POLL users. New users are bound to have problems initially, with determining their software communications parameters, with bad phone lines, or with signing on to the system. At Alexander Library, we encountered all of these problems, and each time the technical staff at Roper analyzed our situation over the telephone, and coached us through to a solution. Anyone interested in contacting the Roper Center with questions about POLL may do so by writing to Marilyn Potter, Assistant Director for User Services and Administration, Roper Center for Public Opinion Research, P.O. Box 440, Storrs, CT 06268, or may call at (203) 486-4440.

*All background information on POLL was obtained directly from Marilyn Potter and Sterling Green, staff members at the Roper Center.¤

Letter from the President

June 1987

Dear IASSIST Member,

I've just returned from the IASSIST annual conference in Vancouver and I'd like to share some impressions with each of you. These impressions are based on the brief wrap-up I presented at the end of the conference.

For those of you who were there the words will sound familiar; for those of you who were not I hope that I convey some flavor of the conference and that I inspire you to plan ahead for Washington, D.C. in 1988 and Jerusalem in 1989. (Tentative locations for future conferences are Ottawa, San Francisco and Chicago. Let me know if you'd be interested in working on conferences in any of those locations.)

My Hungarian mother-in-law has probably served hundreds—if not thousands—of melons in her day. Yet each one is the best one ever. Well, I feel that way about IASSIST. Each conference is the best one ever, and this year's was no exception. Local arrangements were just perfect. Laine Ruus and Walter Piovesan arranged for a comfortable, cooperative hotel and a wonderful outing—a boatride, a cookout, music and dancing. Sue Gavrel and Carolyn Geda planned an outstanding program which successfully reflected IASSIST's current interests.

The conference began with four workshops, not long sessions, but workshops, which allowed for active participation by everyone. I attended the workshop on electronic mail and conferencing from which I sent my boss a message using the Id PETER RABBIT; needless to say, I got an answer. Others attended the workshops on CULDAT (Canadian Union List of Machine Readable Data), complex data files and integrating machine readable records into the traditional archive.

The program itself had many highlights. However, it is interesting to view it in the context of IASSIST history. In the early days we were all social scientists with a sprinkling of computer service people. Many like me were both. Today our numbers have grown to include people working as librarians, archivists and records managers. These new colleagues have added new dimensions to our thinking. In the early days almost all of us came from academic institutions, from departmental or computer center based data libraries, from research institutes and, particularly in Europe, from the major national data archives. Today more of our data library colleagues are working in traditional libraries; more of our members work in traditional archives, and a growing number of all IASSIST members are in national as well as in state or provincial and local data facilities. A few of us are even from business or commercial organizations.

We're developing new concerns and new views on politics, preservation, training and standards. However, the conference harked back to our early interests as well. The constant references to Sue Dodd, to AACR II, to the cataloging of computer files, indicated our continuing and now well-established interests in the issues which almost overwhelmed the Classification Action Group. Lisa Stewart's paper on information management reminded us of our early efforts to establish standards for data documentation, a subject on which several of our past presidents have written extensively, the need for which is now taken for granted by most individuals or agencies which regularly release data to the public. Data organization and management has gone in two directions: on the one hand, the emphasis on DBMS spawned by the microcomputer industry and on the other, data structures for files larger and more complex than any we imagined in the early days. Process-produced data was another early concern. Per Nielsen's paper in the opening plenary was the only one which addressed data which was strictly process-produced, i.e. produced as a by-product of a government process, but numerous papers focused on the broader field of government-produced data. Only national governments can afford the massive data collections which are now the major substance of secondary analysis. This conference focused less on micros as such; the novelty is beginning to wear off. There was more interest in storage technology and in data transmission standards. Overwhelming everything, however, are the new dimensions in the politics of support; the theme of the 1988 conference is "Use it or Lose it."

But as always the conference didn't stop in the meeting rooms. It continued during the coffee breaks, over meals and over drinks; at early breakfast meetings and late at night. It brought together old friends who have known each other since the early days of IASSIST at meetings going back to Scotland in 1976, Cocoa Beach, FL in 1977, and more recently Santa Monica, CA in 1986 (see complete list below) but, more important, it integrated into the IASSIST family, the newcomers, who left the conference, their heads filled with new ideas, their notebooks crammed with new addresses.

I look forward to seeing all of you next year and in the meantime, don't forget, it's JUDITH@PUCC.BITNET. I love hearing from all of you with questions, ideas, even with complaints.

Judith S. Rowe
Princeton University

NOTE: In connection with another effort I have recently compiled a list of IASSIST meetings. IASSIST was born, so to speak, in Toronto, in 1974 at a meeting of the International Sociological Association (ISA). A planning meeting was held in London, in 1975, in conjunction with a meeting of the European Consortium for Political Research (ECPR). In the summer of 1976 IASSIST sponsored a session at the International Political Science (IPSA) meetings in Edinburgh and in February of 1977, twenty-eight people met in Cocoa Beach. A more formal meeting was held later that year in Toronto. Computer conferencing was used to plan a February meeting in Itasca, IL, which was well-attended in spite of the snow. That summer, IASSIST had its last piggy-back meeting in Uppsala, Sweden in conjunction with the ISA. In 1979 we were in Ottawa and in 1980 in Washington, DC. In 1981 we held our first European stand alone meeting in Grenoble and in 1982 the first California meeting at Coronado Beach. Philadelphia was the site for 1983 and in 1984 we were back in Ottawa. In 1985 we were in Amsterdam, 1986 Santa Monica and, most recently, the 1987 Vancouver meeting.□

News & Notes

IASSIST Has Panel at ICDBHSS

Don Harrison, Jackie McGee and Lars Holm hosted an IASSIST panel at the International Conference on Data Bases in the Humanities and Social Sciences (ICDBHSS) on Sunday, July 12 at Auburn University at Montgomery, Alabama. The idea came up because ICDBHSS had asked IASSIST to be a sponsor. In consultation with the Administrative Committee, President Judith Rowe chose this as a vehicle to enhance IASSIST's visibility, yet not commit other members to attend. Laine Ruus, a fourth member of the panel, was unable to attend.

As an IASSIST panel, the group stressed the values of data archives and secondary research to the ICDBHSS audience, predominately users. After sending best wishes from IASSIST President Judith Rowe, the panel discussed the present membership and activities of the international organization, as well as outlining some activities we expect tp pursue in the coming years. After lively discussion, chair Don Harrison encouraged attendance at the 1988 Washington, DC meeting, by soliciting papers and other presentations.

Jackie discussed the institutional costs and user benefits of data archives by explaining how RAND encourages secondary research on their holdings. Lars outlined how his institution distributes data to its user community and the various activities at the archives. Laine's presentation, which was read by Don, emphasized the ethical issues in citing source data files for publications and making data files available for secondary analysis as an essential part of the peer review process. Laine's presentation emphasized this as a basic tenant of academic research. For his own presentation, Don discussed how the National Archives of the United States handles electronic records as a traditional archives.

Over a hundred data base creaters, managers and users attended the sessions during a hot July weekend in Alabama. Between 90 and 95 papers presented were accepted for publication in the PROCEEDINGS. Among the keynote speakers were Admiral Grace Hopper, an original compiler of COBOL; Professor Toni Carbo Bearman, Dean of the University of Pittsburg School of Library and Information Science; and Dr. Frank G. Burke, the Archivist of the United States. Dr. Burke spoke on "ISO Standard 8211 and Electronic Archives."

The principal coordinator was Larry McCrank, Dean of the Auburn University Library at Montgomery.

IASSIST Memebership Update

Lauralee Thompson, *Brown University*
Gary Hunter, *University of Melbourne*
Vassar College Library
Jerry Wasserman, *Los Angeles, California County Sheriffs Dept.*
George Sharrard, *New York University*
Dianne A. Schmidley, *Bell Atlantic*
Helge S. Moll, *Norwegian Social Science Data Services*
Pamela Harrison, *Rand Corporation*
Carolyn Harness, *Rand Corporation*
James Dewar, *Rand Corporation*
Sam Costa, *Princeton University*
Peter Burnhill, *University of Edinburgh*
Gregory Merenbach, *City of Los Angeles, California*
Susan M. Squires, *LAMSAC, England*
William D. Diemer, *City of Los Angeles, California*
Daniel Tsang, *University of California, Irvine*
Esther Dyer, *Blue Cross/Blue Shield*
Warren E. Babcock, *Utah State University*
Eleanor A. Gossen, *SUNY- Albany*
University of Western Ontario, Social Science Computing Lab
William Connett, *University of Michigan*
Anna Borrull, *CIDOB, Spain*
Kimio Uno, *University of Tsukubo*
Australian Bureau of Statistics
Karin Wengelin, *Uppsala University Hospital, Sweden*

IASSIST 1987: Secretary's Conference Summary

By all accounts Vancouver was a successful, enjoyable conference. In lieu of formal minutes this summary provides some indication of the topics dicussed at the various business meetings and social gatherings.

Jackie McGee, IASSIST Treasurer, announced bank balances as of April 30, 1987 of $11,340.68 (US). Libby Stephenson Membership Chair, reported that regular memberships total 230 (USA=159; Canada=28; Non-NA=43).

Judith reported that Erika Von Brunken, European Secretariat, has resigned. Judith sent Erika congratulations on retirement and wished her every success. Wendy Watkins provided a report on the relevant activities of Canadian data archivists and their institutions.

We will have two Admin Committee meetings at mid-year: one on the Saturday after APDU in Washington (October 24) and one in connection with the ICPSR which meets November 13-15 in Ann Arbor. In addition to the Admin Committee, any IASSIST member is cordially invited to attend either of these two meetings.

A committee has been appointed to oversee requests for travel subsidies for any Admin Committee member or invited speaker who cannot obtain institutional funding to attend an IASSIST meeting. It is not the AC's intention to provide anyone with full funding.

A nominations and elections committee was appointed for the coming election. It consists of Judith, Jackie McGee and Ed Hanis. Nominations should be submitted as soon as possible. Elections must take place before January 1, 1988.

Judith appointed a committee to clarify the duties of the Admin Committee. Members are Chuck Humphrey, Roger Jones, Carolyn Geda and Rick Bender.

The next IASSIST meetings will be in Washington, D.C. in 1988; in Jerusalem in 1989. No definite location has been set for 1990.

An interest survey of IASSIST members has been taken with 74 members responding. There will be an article in the QUARTERLY on the final results.

Walter Piovesan announced that Libby Stephenson and Roger Jones will be co-Book Review/Software Review Editors for the QUARTERLY.

The weather, the hotel, the boat ride, the picnic and the dancing into the dead of night were as splendid as the courtesy of Laine Ruus and Walter Piovesan. Congratulations to them, and to Laine's "Chief."

Respectfully submitted Don Harrison
Secretary/Archivist

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